signal in response to the yaw stability control signal and the roll stability control signal.

23. (New) A system as recited in claim 22 further comprising a yaw rate sensor generating a yaw rate signal corresponding to a yawing angular motion of the vehicle body;

a lateral acceleration sensor generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body; and

a vehicle velocity sensor generating a vehicle velocity signal;

said yaw stability control unit coupled to said yaw rate sensor, said lateral acceleration sensor, and said vehicle velocity sensor, said yaw control unit determining said yaw stability control signal from the yaw angular rate signal, the lateral acceleration signal, the steering wheel angle signal, and the vehicle velocity signal.

24. (New) A system as recited in claim 23 wherein the vehicle velocity sensor comprises a plurality of wheel speed sensors generating wheel speed signals.

25. (New) A system as recited in claim 23 further comprising a steering angle sensor generating a steering angle signal corresponding to a hand wheel angle;

26. (New) A system as recited in claim 22 further comprising a yaw rate sensor generating a yaw rate signal corresponding to a yawing angular motion of the vehicle body;

a lateral acceleration sensor generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body;

a vehicle velocity sensor generating vehicle velocity signal;

said roll stability control unit coupled to said yaw rate sensor, said lateral acceleration sensor, and said vehicle velocity sensor, said roll stability control unit determining a roll stability control signal from the yaw angular rate signal, the lateral acceleration signal, the steering wheel angle signal, and the vehicle velocity signal.

27. (New) A system as recited in claim 26 wherein the vehicle velocity sensor comprises a plurality of wheel speed sensors generating wheel speed signals.

28. (New) A system as recited in claim 26 further comprising a steering angle sensor coupled to the roll stability control unit, said steering angle sensor generating a steering angle signal corresponding to a hand wheel angle.

29. (New) A system as recited in claim 22 wherein the roll stability control unit comprises a wheel normal loading detection unit generating a wheel lift signal.

30. (New) A system as recited in claim 29 wherein said wheel normal loading detection unit generates a wheel loading signal in response to the vehicle velocity signal, the yaw rate signal, a slip angle and steering wheel angle during an active wheel lifting detection cycle.

31. (New) A system as recited in claim 30 wherein said roll stability control unit comprises a rollover event detection unit generating a flag in response to said wheel loading signal or a wheel lift signal.

32. (New) A system as recited in claim 22 wherein said roll stability control unit generates a wheel loading signal in response to a rolling radius.

33. (New) A system as recited in claim 22 wherein said roll stability control unit comprises a roll angle estimation unit generating a relative roll angle signal.

34. (New) A system as recited in claim 33 wherein the roll angle estimation unit generates the relative roll angle signal as a function of a suspension roll damping rate.

35. (New) A system as recited in claim 33 wherein the roll angle estimation unit generates the relative roll angle signal as a function of a total vehicle suspension roll spring rate.

36. (New) A system as recited in claim 33 wherein the roll angle estimation unit generates the relative roll angle signal as a function of a vehicle mass, a height of a center of gravity, a suspension roll damping rate and the total vehicle suspension roll spring rate.

37. (New) A system as recited in claim 22 wherein said roll stability control unit comprises a roll feedback control unit generating the roll stability control signal in response to the relative roll angle signal.

38. (New) A system as recited in claim 22 further comprising a switch for decoupling said yaw stability control unit and the roll stability control unit.

39. (New) A system as recited in claim 38 wherein said switch comprises a user operated switch.

40. (New) A system as recited in claim 22 further comprising a safety system receiving said safety system control signal.

41. (New) A system as recited in claim 40 wherein said safety system comprises a brake system.

42. (New) A system as recited in claim 40 wherein said brake system comprises a brake pressure command generation unit generating a brake command in response to said safety signal.

43. (New) A system as recited in claim 42 wherein said brake command comprises a front brake command.

44. (New) A system as recited in claim 42 wherein said brake command comprises a rear brake command.

45. (New) A system as recited in claim 42 wherein said brake command comprises a front brake command and a rear brake command.

46. (New) A system as recited in claim 42 wherein said brake command comprises a right front brake command, a right rear brake command, a left front brake command, and a left rear brake command.

47. (New) A control system as recited in claim 40 wherein said safety system comprises an active rear steering system.

48. (New) A control system as recited in claim 40 wherein said safety system comprises an active front steering system.

49. (New) A control system as recited in claim 40 wherein said safety system comprises an active anti-roll bar system.

50. (New) A control system as recited in claim 40 wherein said safety system comprises an active suspension system.

51. (New) A system as recited in claim 22 wherein the roll stability control unit and the yaw stability control unit are separate.

52. (New) A system as recited in claim 22 wherein the integration unit comprises a yaw stability control priority determination unit, a roll stability control priority determination unit and a yaw stability control and roll stability control integration unit, said yaw stability control and roll stability control integration unit minimizing counteracting effects from the yaw stability control determination unit and the roll stability control priority determination unit.

53. (New) A method of controlling an automotive vehicle comprising:

determining a yaw control signal;

determining a roll stability control signal;

generating a safety system control signal as a function of the roll stability control signal and the yaw stability control signal; and

activating a safety device in response to said safety system control signal.

54. (New) A method as recited in claim 53 wherein determining a yaw control signal comprises determining the yaw control signal as a function of a lateral acceleration, a yaw rate and a vehicle velocity.

55. (New) A method as recited in claim 53 wherein determining a yaw control signal comprises determining the yaw control signal as a function of a lateral acceleration, a yaw rate, a steering wheel angle and a vehicle velocity.

56. (New) A method as recited in claim 53 wherein determining a roll control signal comprises determining the roll control signal as a function of a lateral acceleration, a yaw rate and a vehicle velocity.

57. (New) A method as recited in claim 53 wherein determining a roll control signal comprises determining the roll control signal as a function of a lateral acceleration, a yaw rate, a steering wheel angle and a vehicle velocity.

58. (New) A method as recited in claim 53 wherein activating a safety device comprises activating a brake control system.

59. (New) A method as recited in claim 53 wherein activating a safety device comprises one selected from the group consisting of an active rear steering system, an active front steering system, an active anti-roll bar system, and an active suspension system.

60. (New) A method as recited in claim 53 wherein determining a roll stability control signal comprises generating a wheel lift flag in response to a wheel normal loading signal during an active wheel lift detection cycle.

61. (New) A method as recited in claim 53 wherein determining a normal wheel loading comprises determining a normal wheel loading in response to a rolling radius.

62. (New) A control system for an automotive vehicle having a vehicle body comprising:

a yaw rate sensor generating a yaw rate signal corresponding to a yawing angular motion of the vehicle body;

a lateral acceleration sensor generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body;

a steering angle sensor generating a steering angle signal corresponding to a hand wheel angle;

a plurality of wheel speed sensors generating wheel speed signals corresponding to each four wheel speed of the vehicle; and

a yaw stability control unit and a roll stability control unit coupled to said yaw rate sensor, said lateral acceleration sensor, said steering wheel angle sensor and said plurality of wheel speed sensors, said yaw control unit and said roll stability control unit determining a respective yaw stability control signal and a roll stability control signal from the yaw angular rate signal, the lateral acceleration signal, the steering wheel angle signal, and the wheel speed signals; and

an integration unit coupled to the yaw stability control unit and the roll stability control unit, said integration unit determining a safety system control signal in response to the yaw stability control signal and the roll stability control signal.

Please charge any fees required in the filing of this amendment to deposit account 06-1510.

Respectfully submitted,

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